

ADDENDUM No. 1

TO: ALL BIDDERS  
FROM: CITY OF HIALEAH  
ITB #: 2016/17-9500-00-010  
RE: ITB – PUMP STATION IMPROVEMENT PROGRAM PHASE II  
DATE: April 11, 2017

The original contract documents for the entitled: **ITB – PUMP STATION IMPROVEMENT PROGRAM PHASE II** needs to be amended as noted in this Addendum No. 1.

This Addendum No. 1 consists of 1 typed page, 1 attachment, and 1 addendum receipt form (ARF). All other items and conditions of the original Contract Documents shall remain unchanged. This Addendum shall become a part of the Contract Documents.

Approved for issue:  Date: April 11, 2017  
Luis A. Suarez – Acting Purchasing Manager

ACKNOWLEDGMENT

Receipt of this Addendum No. 1 shall be acknowledged in the space provided on the ADDENDUM RECEIPT form – ARF (Copy attached) now a part of the Contract Documents to be faxed immediately to the City of Hialeah Purchasing Division (305) 883-5871 and submitted with sealed bids.

QUESTIONS AND ANSWERS:

Intercounty Engineering, INC.

Q1. Engineer's estimate for this project?

A1. The engineer's estimate for this project is \$1.65 million.

**Drawings**

1. ELECTRICAL DRAWINGS E01, E02, E03, E04: REPLACE with DRAWINGS E01, E02, E03, E04 marked (attached)

CITY OF HIALEAH

ITB – PUMP STATION IMPROVEMENT PROGRAM PHASE II

ADDENDUM No. 1

CONTRACTOR'S NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

PHONE NO. \_\_\_\_\_

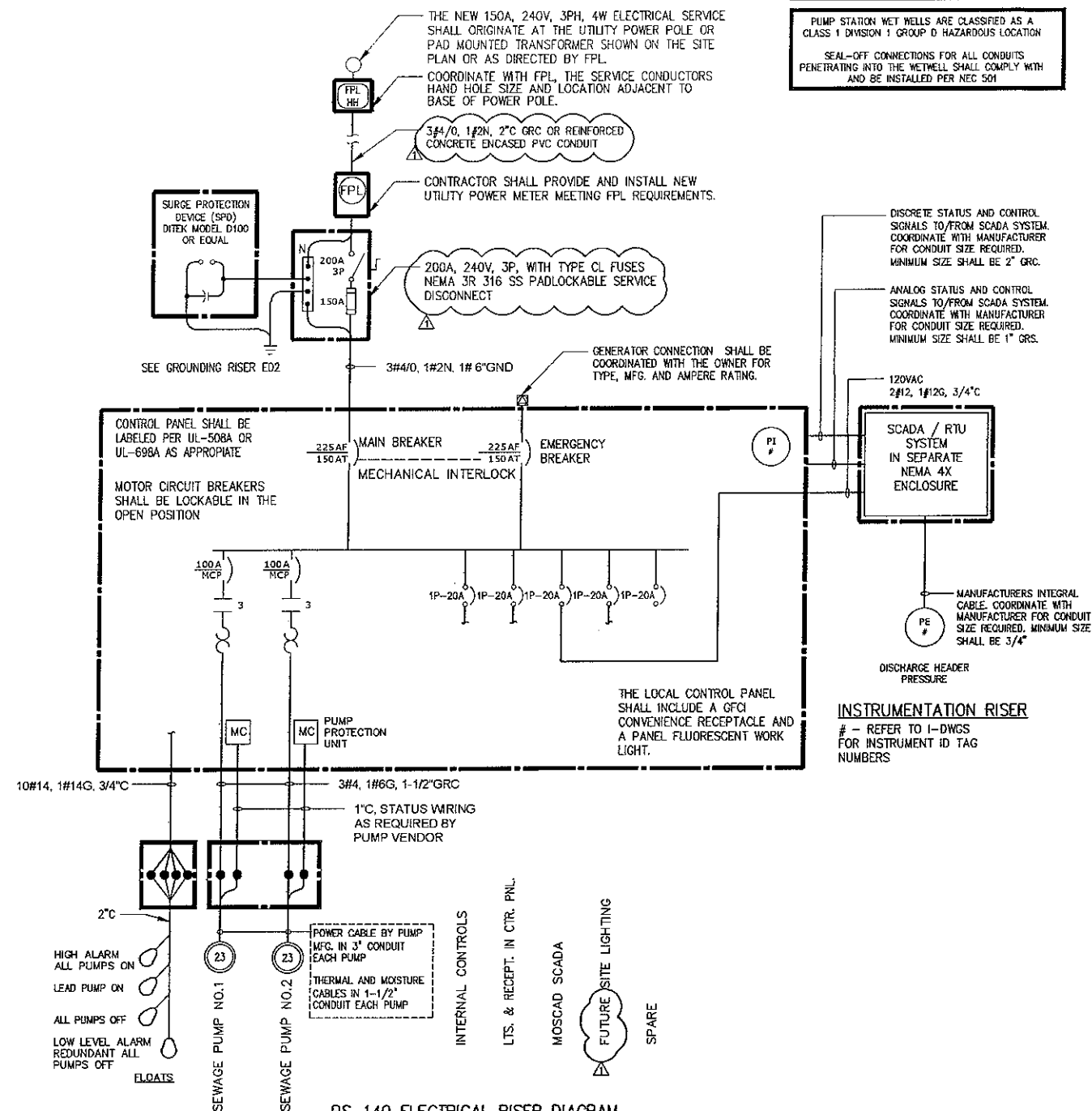
CONTACT NAME \_\_\_\_\_ SIGNATURE \_\_\_\_\_

THE BIDDER ACKNOWLEDGES RECEIPT OF THE FOLLOWING ADDENDUM BY SIGNING AND DATING BELOW:  
(Copy of this form must be faxed immediately to the City of Hialeah at (305) 883-5871).

<u>ADDENDUM</u>	<u>SIGNATURE</u>	<u>DATE</u>
1		

PS-140 SERVICE LOAD CALCULATIONS		
LOAD DESCRIPTION	CONNECTED AMPS	OPERATING AMPS
PUMP NO. 1 @ 23HP	52	47
PUMP NO. 2 @ 23HP	52	-
LCP AUXILIARY LOADS (3kVA)	12	10
25% OF LARGEST MOTOR LOAD	13	-
TOTALS @ 240V, 3PH	129	56
FPL SERVICE REP & PHONE NO.	MARCO MOVILLA	305 599-4078
FPL AVAILABLE FAULT CURRENT:		

PUMP STATION WET WELLS ARE CLASSIFIED AS A CLASS 1 DIVISION 1 GROUP D HAZARDOUS LOCATION  
SEAL-OFF CONNECTIONS FOR ALL CONDUITS PENETRATING INTO THE WETWELL SHALL COMPLY WITH AND BE INSTALLED PER NEC 501



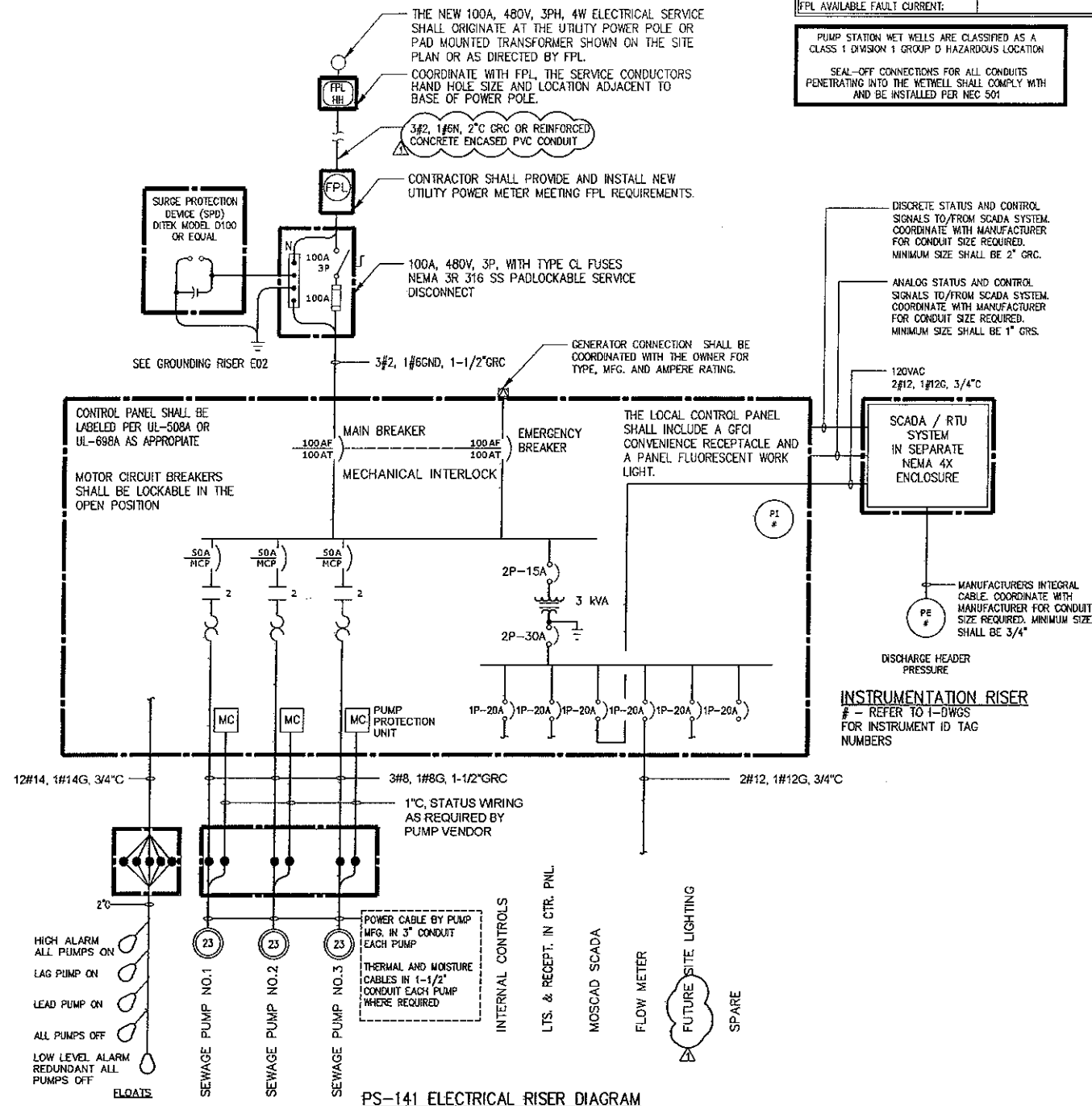
PS-140 ELECTRICAL RISER DIAGRAM

CONTRACTOR SHALL CONFIRM CONDUIT, WIRING, BREAKERS, MOTOR STARTERS SIZING WITH EQUIPMENT VENDORS.

- SEE DRAWING ### TABLES:  
1. VOLTAGE DROP CALCULATIONS FOR ALL STATIONS IN PHASE 1  
2. AVAILABLE FAULT CURRENT FOR STATION

PS-141 SERVICE LOAD CALCULATIONS		
LOAD DESCRIPTION	CONNECTED AMPS	OPERATING AMPS
PUMP NO. 1 @ 23HP	26	23
PUMP NO. 2 @ 23HP	26	23
PUMP NO. 3 @ 23HP	26	-
LCP AUXILIARY LOADS (3kVA)	6.25	5
25% OF LARGEST MOTOR LOAD	7	-
TOTALS @ 480V, 3PH	91	52
FPL SERVICE REP & PHONE NO.	MARCO MOVILLA	305 599-4078
FPL AVAILABLE FAULT CURRENT:		

PUMP STATION WET WELLS ARE CLASSIFIED AS A CLASS 1 DIVISION 1 GROUP D HAZARDOUS LOCATION  
SEAL-OFF CONNECTIONS FOR ALL CONDUITS PENETRATING INTO THE WETWELL SHALL COMPLY WITH AND BE INSTALLED PER NEC 501



PS-141 ELECTRICAL RISER DIAGRAM

CONTRACTOR SHALL CONFIRM CONDUIT, WIRING, BREAKERS, MOTOR STARTERS SIZING WITH EQUIPMENT VENDORS.

- SEE DRAWING ### TABLES:  
1. VOLTAGE DROP CALCULATIONS FOR ALL STATIONS IN PHASE 1  
2. AVAILABLE FAULT CURRENT FOR STATION

NOT DATE: 4/2/2017 2:44 PM ET: JMB

DESIGNED	JMB
DRAWN	JMB
CHECKED	JCB
PROJ. ENGR.	CLK
DATE	APRIL 2017
NO.	1
ISSUED FOR	ADDENDUM NO.1
BY	JMB

DESIGNED	JMB
DRAWN	JMB
CHECKED	JCB
PROJ. ENGR.	CLK

JOHN C. BURKE	P.E.
No. 17301	

**Hazen**

999 Ponce de Leon Boulevard, Suite 1150  
Coral Gables, FL 33134  
Certificate of Authorization Number: 2771

SCALE  
NONE

CONTRACT:	-
CLIENTS PROJECT:	-
ENGINEERS PROJECT:	46016-016
CAD REFERENCE:	46016-016 E01



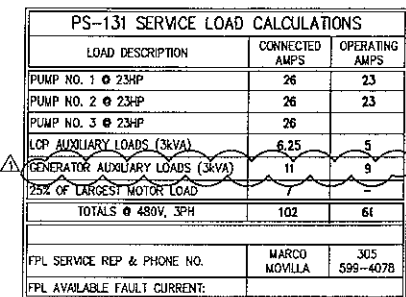
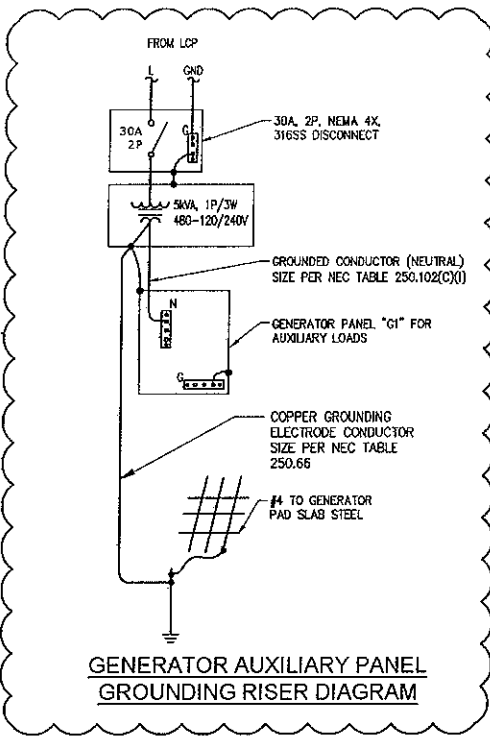
CITY OF HIALEAH  
DEPARTMENT OF PUBLIC WORK

PUMP STATION IMPROVEMENT PROGRAM  
PHASE 2

PUMP STATIONS 140 & 141 PSIP ELECTRICAL

DATE:	DECEMBER 2016
SHEET:	27 of 29
DRAWING:	E01

BID SET



LOAD DESCRIPTION	CONNECTED AMPS	OPERATING AMPS
PUMP NO. 1 @ 23HP	26	23
PUMP NO. 2 @ 23HP	26	23
PUMP NO. 3 @ 23HP	26	---
LCP AUXILIARY LOADS (3KVA)	6.25	5
GENERATOR AUXILIARY LOADS (3KVA)	11	9
25% OF LARGEST MOTOR LOAD	---	---
TOTALS @ 480V, 3PH	102	61
FPL SERVICE REP & PHONE NO.	MARCO MOVILLA	305 -4078
FPL PROPOSED FAULT CURRENT:	SEE TABLE DWG E03	

PUMP STATION WET WELLS ARE CLASSIFIED AS A  
CLASS 1 DIVISION 1 GROUP D HAZARDOUS LOCATION

SEAL-OFF CONNECTIONS FOR ALL CONDUITS  
PENETRATING INTO THE WETWELL SHALL COMPLY WITH  
AND BE INSTALLED PER NEC 501



PS-131 & 133 FIXED ONSITE GENERATORS IN ALUMINUM SOUND ATTENUATED ENCLOSURE WITH 600 GAL MINIMUM BASE DIESEL FUEL TANK.  
80KW, 480V, 3PH, 4W  
GENERATOR SHALL OPERATE PUMP STATION AUXILIARY LOADS PLUS TWO 23HP PUMPS

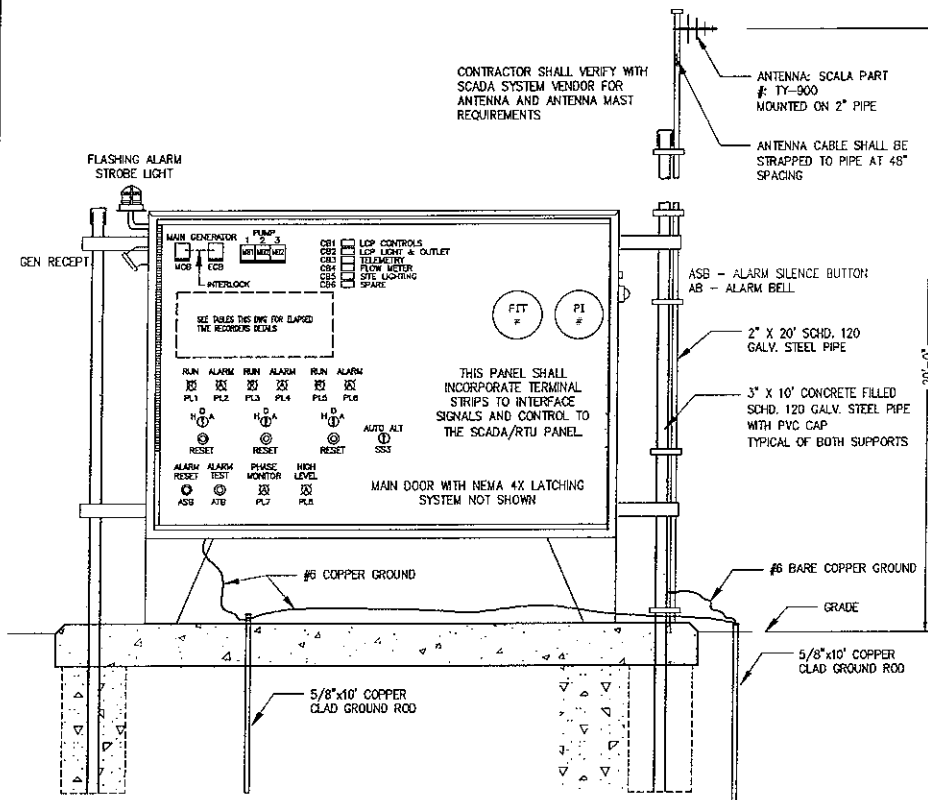
SEE DRAWING ED3 TABLES:  
1. VOLTAGE DROP CALCULATIONS FOR ALL STATIONS IN PHASE I  
2. AVAILABLE FAULT CURRENT FOR STATION

KEY NOTES:

- ① EMERGENCY SHUTDOWN BUTTON SHALL BE 2-POLAR MINIMUM WITH SHUNT TRIP SOURCE VOLTAGES ORIGINATING AT EACH BREAKER. BUTTON SHALL BE ANNOTATED WITH "DEVICE HAS MULTIPLE VOLTAGE SOURCES". BUTTON SHALL SHUT DOWN BOTH UTILITY AND GENERATOR POWER.
- ② A NEMA 4X STAINLESS STEEL LOCAL CONTROL PANEL FOR FUEL TANK FILL ALARMS AND TANK LEAK DETECTION LOCAL CONTROLS AND ANNUNCIATION SHALL BE PROVIDED BY THE GENERATOR VENDOR. AN ALARM HORN AND STROBE LIGHT (ST) SHALL BE MOUNTED TO SIDES OF LCP. SEE GENERATOR SPECIFICATION 16620 FOR DETAILS.

PS-131 & PS-133 ELECTRICAL RISER DIAGRAM

DESIGNED <u>JMB</u> DRAWN <u>JMB</u> CHECKED <u>JCB</u> PROJ. ENGR. <u>CLK</u>		JOHN C. BURKE No. 17301		 999 Ponce de Leon Boulevard, Suite 1150 Coral Gables, FL 33134 Certificate of Authorization Number: 2771		SCALE  N.T.S.		CONTRACT: <u>          </u> CLIENTS PROJECT: <u>          </u> ENGINEERS PROJECT: <u>46016-016</u> CAD REFERENCE: <u>46016-016 E02</u>		 CITY OF HIALEAH DEPARTMENT OF PUBLIC WORK		PUMP STATION IMPROVEMENT PROGRAM PHASE 2  PUMP STATIONS 130 & 131 PSIP ELECTRICAL		DATE: <u>DECEMBER 2016</u> SHEET: <u>28</u> OF <u>29</u> DRAWING: <u>E02</u>	
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PUMPS LCP DEADFRONT VIEW WITH ANTENNA MAST DETAIL

SEE MECHANICAL DRAWINGS FOR EQUIPMENT LAYOUT

120V SCHEDULE SHOWN FOR GENERAL INFO ONLY. SHOWN BELOW ARE THE MINIMUM CIRCUIT BREAKERS REQUIRED AND ARE AN INTEGRAL PART OF THE FACTORY ASSEMBLED PUMP AND SCADA LOCAL CONTROL PANEL.

CKT	DESCRIPTION	VA	BKR	WIRES	CONDUIT
CB1	LEVEL CONTROL PANEL (LCP)	400	1P-20A	2-#12, 1-#12 GND	INTERNAL
CB2	LCP LIGHTS AND GFCI RECEPTACLE	360	1P-20A	2-#12, 1-#12 GND	INTERNAL
CB3	SCADA (TELEMETRY)	440	1P-20A	2-#12, 1-#12 GND	3/4" PVC
CB4	FLOW METER	360	1P-20A	2-#12, 1-#12 GND	3/4" PVC
CB5	SITE LIGHTING	360	1P-20A	2-#12, 1-#12 GND	3/4" PVC
CB6	SPARE	780	1P-20A	NA	
	TOTAL	2700			

ELAPSED TIME RECORDERS

DUPLEX STATION FUNCTION	RECORDER
PUMP 1 RUNNING	ETM1
PUMP 2 RUNNING	ETM2
PUMPS 1 & 2 RUNNING SIMULTANEOUSLY	ETM3
PUMP 1 RUNNING DURING AGENCY SELECTED TIME OF DAY RANGE	ETM4
PUMP 2 RUNNING DURING AGENCY SELECTED TIME OF DAY RANGE	ETM5

ELAPSED TIME RECORDERS

TRIPLEX STATION FUNCTION	RECORDER
PUMP 1 RUNNING	ETM1
PUMP 2 RUNNING	ETM2
PUMP 3 RUNNING	ETM3
PUMPS 1 & 2 & 3 RUNNING SIMULTANEOUSLY	ETM4
PUMP 1 RUNNING DURING AGENCY SELECTED TIME OF DAY RANGE	ETM5
PUMP 2 RUNNING DURING AGENCY SELECTED TIME OF DAY RANGE	ETM6
PUMP 3 RUNNING DURING AGENCY SELECTED TIME OF DAY RANGE	ETM7

VOLTAGE DROP CALCULATIONS FOR PHASE 2 PUMP STATIONS

PS	ID	VOLTS	PHASE	AWG	LENGTH ONE WAY	AMPS AT LOAD	IMP OHMS	VD %	VOLTS AT LOAD
131	SERVICE / FEEDER	480	3	2	100	57	0.19	0.4%	478
	MOTOR BRANCH	480	3	8	50	40	0.69	0.5%	478
	AUX EQPT BRANCH	120	1	12	30	15	1.98	1.5%	118
133	SERVICE / FEEDER	480	3	2	100	57	0.19	0.4%	478
	MOTOR BRANCH	480	3	8	50	54	0.69	0.7%	477
	AUX EQPT BRANCH	120	1	12	30	15	1.98	1.5%	118
141	SERVICE / FEEDER	480	3	2	100	56	0.19	0.4%	478
	MOTOR BRANCH	480	3	8	50	115	0.69	1.4%	473
	AUX EQPT BRANCH	120	1	12	30	15	1.98	1.5%	118
140	SERVICE / FEEDER	240	3	4/0	100	52	0.074	0.3%	239
	MOTOR BRANCH	240	3	4	50	77	0.29	0.8%	238
	AUX EQPT BRANCH	120	1	12	30	15	1.98	1.5%	118

NOTE: THE LENGTHS ARE ESTIMATED WORST CASE CONDITIONS.

AVAILABLE FAULT CURRENT FOR PHASE 2 PUMP STATIONS

PS	DESCRIPTION	V	PH	KVA	IMP	FAULT
131	CALCULATED MAR. 2017					
	UTILITY TRANSFORMER	480	3	112	3.00%	4,491
	MOTOR CONTRIBUTION	480	3	52	25.00%	250
	TOTAL FAULT AMPS					4,741
133	CALCULATED MAR. 2017					
	UTILITY TRANSFORMER	480	3	112	3.00%	4,491
	MOTOR CONTRIBUTION	480	3	52	25.00%	250
	TOTAL FAULT AMPS					4,741
141	CALCULATED MAR. 2017					
	UTILITY TRANSFORMER	480	3	112	3.00%	4,491
	MOTOR CONTRIBUTION	480	3	52	25.00%	250
	TOTAL FAULT AMPS					4,741
140	CALCULATED MAR. 2017					
	UTILITY TRANSFORMER	240	3	112	3.00%	8,981
	MOTOR CONTRIBUTION	240	3	155	25.00%	1,492
	TOTAL FAULT AMPS					10,473

NOTES:  
1. FOR CALCULATION PURPOSES, 1 HP = 1 KVA  
2. THE TOTAL AVAILABLE FAULT CURRENTS SHOWN ARE BASED ON A FPL INFINITE BUS. ACTUAL VALUES WILL BE LESS THAN THOSE SHOWN.

# NOTES:

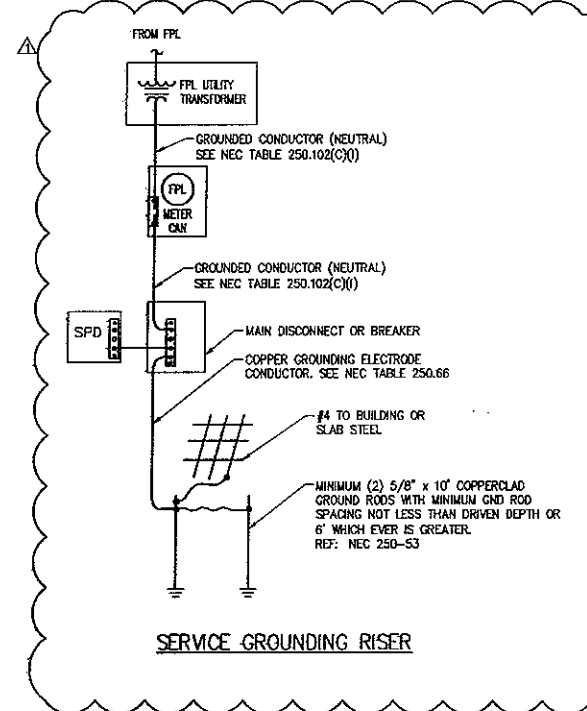
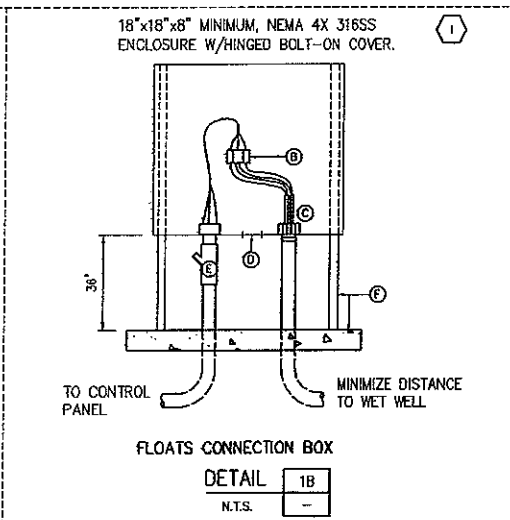
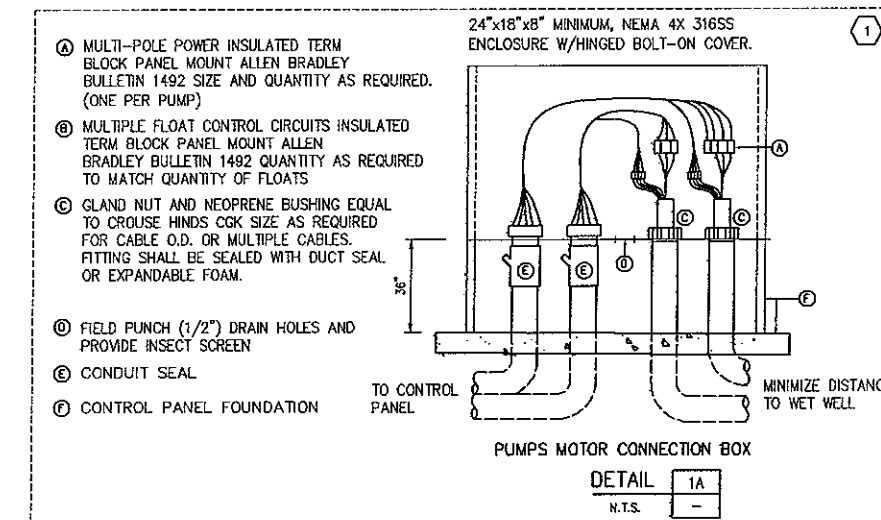
- ELECTRICAL SERVICE SHALL COMPLY WITH FPL STANDARDS SEE MECHANICAL DWGS. FOR LOCATION AND INSTALLATION DETAILS.
- CONTRACTOR SHALL OBTAIN AND VERIFY AVAILABLE FAULT CURRENT WITH FPL. MINIMUM INTERRUPTING CAPACITY OF THE ELECTRICAL EQUIPMENT SHALL BE GREATER THAN SHOWN ON TABLE OR GREATER THAN VALUE FROM FPL.
- CONTRACTOR SHALL PROVIDE, INSTALL, AND TERMINATE ALL CONTROL, SIGNAL AND POWER WIRING WITH ASSOCIATED CONDUITS. TELEMETRY STATUS SIGNALS AND CONTROL SIGNALS SHALL BE LOOP TESTED BACK TO THE BASE STATION AFTER ALL UPGRADES ARE COMPLETE.
- CONTRACTOR SHALL COORDINATE WITH THE PUMP LEVEL CONTROL PANEL VENDOR TO DETERMINE WHETHER OR NOT TO INCORPORATE THE SCADA EQUIPMENT WITHIN THE PANEL OR PROVIDE SEPARATE ENCLOSURE.
- ALL OTHER TELEMETRY COMPONENTS, e.g. ANTENNA, MAST, CABLING, GROUNDING AND OTHER APPURTENANCES REQUIRED FOR A COMPLETE SYSTEM SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AS COORDINATED WITH THE SCADA VENDOR.
- CONTRACTOR SHALL UPGRADE THE EXISTING SCADA SYSTEM BASE STATION SCREEN DISPLAYS, HISTORICAL RECORDING AND REPORT GENERATION AS REQUIRED TO REFLECT EXISTING AND NEW EQUIPMENT AT THE SITE.
- THE CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO WEEKS NOTICE TO THE OWNER WHEN THE STATION IS COMPLETE, OPERATIONAL AND THE TELEMETRY SYSTEM IS READY FOR DEMONSTRATING AND TESTING.
- MOTOR CIRCUIT BREAKERS SHALL BE CAPABLE OF BEING PADLOCKED IN THE OPEN POSITION WITH LOCKS NOT OBSTRUCTING THE CLOSING OF DOOR.
- MOTOR WIRES SHOWN ARE MOTOR POWER AND GROUND ONLY.
- ALL SIGNAL AND CONTROL WIRING FOR MOTORS AND AUXILIARY EQUIPMENT SHALL BE INCLUDED.
- THE WET WELL IS CLASSIFIED AS A CLASS I DIVISION 1 GROUP "D" HAZARDOUS LOCATION.
- SUBMERSIBLE PUMP CABLES AND FLOAT CABLES SHALL BE LISTED FOR CLASS 1, DIVISION 1, GROUP D HAZARDOUS LOCATIONS.
- PUMP CONTROL PANEL ASSEMBLY SHALL BE MANUFACTURED AND LABELED PER UL 508A OR UL 698A AS REQUIRED.
- MAIN DISCONNECT SWITCH SIZED TO MATCH MAIN CIRCUIT BREAKER AND IN A LOCKABLE NEMA 3R-316 STAINLESS STEEL ENCLOSURE.
- THE PUMP CONTROL PANEL SHALL INCORPORATE AN INTRUSION SWITCH THAT ACTIVATES AN ALARM TO THE SCADA WHENEVER THE PANEL IS OPENED.
- BOND ALL METALLIC COMPONENTS TO SYSTEM GROUND.
- ALL INDICATOR LAMPS SHALL BE OF THE HIGH BRIGHTNESS LED TYPE AND INCLUDE PUSH TO TEST OR HAVE AN "ALL LAMP" TEST BUTTON.
- ALL STARTERS AND CONTACTORS SHALL BE NEMA RATED
- ALL EXISTING ELECTRICAL EQUIPMENT SHALL BE DEMOLISHED AND REMOVED FROM THE SITE. EXISTING EQUIPMENT THAT THE OWNER WANTS TO KEEP SHALL BE DELIVERED TO THE SITE DESIGNATED BY THE OWNER.
- SEE SPECIFICATIONS FOR ADDITIONAL DETAILS AND REQUIREMENTS.
- THE LCP SHALL HAVE 316 S.S. SUNSHIELDS MOUNTED ON 1 INCH MINIMUM STANDOFF STUDS ON FRONT, BACK, TOP AND BOTH SIDES. ACCESS HOLES AS REQUIRED FOR DEVICES PENETRATING THE SUN SHIELDS.
- ADDITIONAL NOTES ON DRAWING ###
- CONTRACTOR SHALL MEASURE THE GROUND RESISTANCE TO ASSURE IT IS LESS THAN OR EQUAL TO 10 OHMS.

## CONTROL STRATEGY:

- PUMPS SHALL BE CONTROLLED VIA FLOATS. NORMAL OPERATION SHALL LIMIT OPERATING PUMPS TO TOTAL PUMPS MINUS ONE OPERATING AND ONE STANDBY.
- EMERGENCY OPERATION SHALL BE TIED TO THE HIGH LEVEL FLOAT AND SHALL OPERATE ALL NORMALLY OPERATING PUMPS.
- PUMPS SHALL BE SHUT DOWN ON FALLING LEVEL IN SAME ORDER AS STARTED.
- ALL PUMPS SHALL BE CONTROLLABLE FROM THE BASE STATION HMI.
- SEE SPECIFICATIONS FOR ADDITIONAL DETAILS
- CONTROL DESIGN AND SCHEMATIC SHALL BE BY PANEL VENDOR (D&R) AND SHALL CONFORM TO OWNER'S CURRENT REQUIREMENTS AND CONDITIONS. BASE STATION SCREEN DISPLAYS AND CONTROLS SHALL BE UPDATED AS REQUIRED.

## ELAPSED TIME RECORDERS NOTES:

- THE LCP SHALL CONTAIN ELAPSED TIME RECORDERS AND AN ASSOCIATED TIME CLOCK AS SHOWN IN THE TABLES. FOR A TRIPLEX PUMP STATION, ETM5, ETM6, AND ETM7 SHALL BE ACTIVATED BY AN ADJUSTABLE TIME CLOCK TO RECORD ONLY DURING THE TIME CLOCK ON DURATION RANGE.
- FOR A DUPLEX PUMP STATION, ETM4 AND ETM5 SHALL BE ACTIVATED BY AN ADJUSTABLE TIME CLOCK TO RECORD ONLY DURING THE TIME CLOCK ON DURATION RANGE.
- INITIALLY SETTINGS FOR RECORDING SHALL BE 12AM-5AM OR AS DIRECTED BY THE AGENCY.



DATE: 4/9/2017 2:41 PM BY: JMB

DESIGNED	JMB
DRAWN	JMB
CHECKED	JCB
PROJ. ENGR.	CLK
DATE	APRIL 2017
ISSUED FOR	ADDENDUM NO.1
BY	JMB

JOHN C. BURKE  
No. 17301

**Hazen**  
999 Ponce de Leon Boulevard, Suite 1150  
Doral, Florida, FL 33134  
Certificate of Authorization Number: 2771

SCALE  
NONE

CONTRACT:  
CLIENTS PROJECT:  
ENGINEERS PROJECT: 46016-016  
CAD REFERENCE: 46016-016 E03

CITY OF HIALEAH  
DEPARTMENT OF PUBLIC WORK

PUMP STATION IMPROVEMENT PROGRAM  
PHASE 2  
COMMON ELECTRICAL DETAILS, NOTES  
AND SCHEDULES

DATE: DECEMBER 2016  
SHEET: 29 of 29  
DRAWING: E03

File: C:\46016-016\Drawings\46016-016\46016-016\_Hazen.ppt Date: 4/9/2017 2:41 PM

GENERAL ELECTRICAL NOTES:  
ALSO SEE ADDITIONAL NOTES ON OTHER SHEETS

1. THE SCOPE OF WORK SHALL BE AS DESCRIBED IN SPECIFICATION SECTION 1601.0.
2. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR TO INSTALL THE ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS. ITEMS NOT SHOWN BUT OBVIOUSLY NECESSARY FOR COMPLETION OF THE WORK SHALL BE INCLUDED.
3. THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MINIMUM FOLLOWING STANDARDS AND CODES:
  - 3.1. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
  - 3.2. NATIONAL ELECTRICAL CODE (NEC), (NFPA 70 LATEST ADOPTED EDITION)
  - 3.3. NATIONAL ELECTRICAL SAFETY CODE, (NFPA 70E LATEST ADOPTED EDITION)
  - 3.4. STANDARD FOR FIRE PROTECTION IN WASTEWATER TREATMENT AND COLLECTION FACILITIES, (NFPA 820 LATEST ADOPTED EDITION)
  - 3.5. OTHER NFPA CODES AS APPLICABLE
  - 3.6. FLORIDA BUILDING CODE (FBC LATEST ADOPTED EDITION)
  - 3.7. LOCAL CODES, CITY CODES REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
  - 3.8. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
  - 3.9. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
  - 3.10. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
  - 3.11. INSULATED CABLE ENGINEERS ASSOCIATION (ICEA)
  - 3.12. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
  - 3.13. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
  - 3.14. UNDERWRITERS LABORATORIES (UL) LISTING AND LABELING FOR ALL MATERIALS AND EQUIPMENT WHERE APPLICABLE STANDARDS EXIST
4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, INSPECTIONS AND APPROVALS AND TO INCLUDE ALL FEES AS PART OF HIS BID IF NOT OTHERWISE NOTED.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE ENGINEER AND OWNER.
6. THE CONTRACTOR SHALL, BEFORE SUBMITTING HIS BID, VISIT THE SITE OF THE PROJECT AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS. NO ALLOWANCE WILL BE MADE FOR EXISTING CONDITIONS OR FAILURE OF THE CONTRACTOR TO OBSERVE THEM.
7. ELECTRICAL EQUIPMENT SHALL BE DEFINED AS ANY ELECTRICAL DEVICE USED IN CONJUNCTION WITH OTHER EQUIPMENT REQUIRING ELECTRICITY FOR OPERATION. THIS INCLUDES BUT IS NOT LIMITED TO: DISCONNECT SWITCHES, JUNCTION BOXES, PANELBOARDS, TRANSFORMERS, LIGHTING FIXTURES, MOTOR STARTERS, SWITCHGEAR, MOTOR CONTROL CENTERS, CONTROLS, LOCAL CONTROL PANELS.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH ALL LOCAL UTILITIES, INCLUDING THE POWER AND TELEPHONE UTILITIES TO MEET ALL OF THEIR INSTALLATION REQUIREMENTS. ALL FEES, LABOR, EQUIPMENT OR MATERIALS NECESSARY TO MEET THESE REQUIREMENTS IS TO BE INCLUDED IN THE BID. THE CONTRACTOR SHALL OBTAIN, DELIVER AND INSTALL ALL CONDUITS, PULL-BOXES AND EQUIPMENT AS REQUIRED BY THE UTILITIES TO THEIR SPECIFICATIONS. THE TELEPHONE UTILITY REPRESENTATIVE IS THE CITY'S TELEPHONE CONTRACTOR.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONDUIT AND WIRING INSTALLATION FOR ALL VENDOR PROVIDED EQUIPMENT (PACKAGE SYSTEMS). IF THE SHOP DRAWINGS DIFFER FROM THE DESIGNED FACILITIES, THE CONTRACTOR SHALL REDESIGN THE FACILITIES AND SUBMIT THE REVISED DESIGN FOR THE ENGINEER'S APPROVAL ALONG WITH THE SHOP DRAWINGS. THERE SHALL BE NO ADDITIONAL COST TO THE OWNER FOR THE REDESIGN NOR FOR ANY ADDITIONAL CONDUITS AND WIRING. DURING SUBMITTAL THE CONTRACTOR SHALL VERIFY ALL SUPPLIED BREAKER SIZES FOR ALL PACKAGED SYSTEMS SUCH AS HVAC, EXHAUST FANS, MIXERS, CHEMICAL PUMPS ETC. AND MODIFY ALL BREAKERS IN MCC'S AND PANELBOARDS ACCORDINGLY WITHOUT ANY ADDITIONAL COST TO THE OWNER.
10. ALL EQUIPMENT AND MATERIAL SHALL BE UNUSED AND U.L. LISTED. ALL REFERENCES TO A PARTICULAR MANUFACTURER ARE GIVEN ON AN "APPROVED EQUAL" BASIS.
11. ALL CONTROL PANELS SHALL BE CONSTRUCTED BY A U.L. 508A APPROVED PANEL VENDOR AND SHALL BEAR A U.L. 508A LABEL ON THE PANEL.
12. THE CONTRACTOR IS RESPONSIBLE TO TEST ALL SYSTEMS INSTALLED OR MODIFIED UNDER THIS PROJECT AND REPAIR OR REPLACE ALL DEFECTIVE WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER.
13. ALL EQUIPMENT FURNISHED AND INSTALLED BY THE CONTRACTOR SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE.
14. ALUMINUM CONDUCTORS SHALL NOT BE USED FOR THIS PROJECT.
15. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL ELECTRICAL & CONTROL EQUIPMENT AND MATERIAL.
16. THE DRAWINGS ARE NOT INTENDED TO SHOW THE EXACT LOCATION OF CONDUIT RUNS. THESE ARE TO BE COORDINATED WITH THE OTHER TRADES SO THAT CONFLICTS ARE AVOIDED PRIOR TO INSTALLATIONS.
17. ALL LOCATIONS OF EQUIPMENT, PANELS ETC. ARE SHOWN FOR ILLUSTRATION PURPOSES. CONTRACTOR SHALL VERIFY AND COORDINATE EXACT LOCATION AND SIZE WITH ALL SUBCONTRACTORS AND EQUIPMENT SUPPLIERS PRIOR TO ANY INSTALLATION AND THEN INSTALL AS SUCH WITH CORRESPONDING CONDUIT STUB-UPS.
18. SEE OTHER DISCIPLINE DRAWINGS FOR COORDINATION OF ALL EQUIPMENT. ANY CONFLICTS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION AND MOVEMENT OF CONDUITS OR OTHER ELECTRICAL EQUIPMENT SHALL BE ACCOMPLISHED WITHOUT ANY ADDITIONAL COST FOR THE OWNER.
19. LOCATIONS OF MANHOLES, HANDHOLES AND PULL BOXES ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE EXACT LOCATION WITH EXISTING AND NEW PIPING OR CONDUITS AND ADJUST ACCORDINGLY.
20. NOT ALL CONDUITS SHOWN ON RISER AND SINGLE-LINE DIAGRAMS ARE SHOWN ON BUILDING LAYOUTS. CONTRACTOR SHALL SUPPLY ALL CONDUITS AND CABLES AS SHOWN ON RISERS AND SINGLE-LINE DIAGRAMS.

21. ALL CIRCUITS SHALL BE IDENTIFIED IN JUNCTION BOXES, PULL BOXES, CONTROL PANELS, PANELBOARDS, LIGHTING POLES, CONTROLLERS AND SERVICE POINTS. IDENTIFICATION SHALL MATCH PANELBOARD SCHEDULES.
22. EXPOSED RUNS OF CONDUITS SHALL BE INSTALLED WITH RUNS PARALLEL OR PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS OR INTERSECTIONS OF VERTICAL PLANES AND CEILINGS, WITH RIGHT ANGLE TURNS CONSISTING OF SYMMETRICAL BENDS OR PULL BOXES AS INDICATED ON THE DRAWINGS. BENDS AND OFFSETS SHALL BE AVOIDED WHERE POSSIBLE.
23. INSTRUMENTATION IS LOW VOLTAGE SIGNALS SUCH AS 4-20MA, TELEPHONE COMMUNICATION, FIRE ALARM COMMUNICATION. POWER CONDUIT SHALL ONLY CROSS INSTRUMENTATION CONDUIT PERPENDICULARLY AT RIGHT ANGLES WITH 6" SEPARATION.
24. CONDUCTOR PULLING TENSIONS SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATION. CONTRACTOR SHALL INSTALL PULL BOXES TO MEET MANUFACTURER'S REQUIREMENTS.
25. CONDUITS RUN IN PARALLEL: INSTRUMENTATION CONDUITS SHALL HAVE A MINIMUM SEPARATION FROM POWER CONDUITS AS INDICATED IN TABLE WHETHER CONCRETE ENCASED DUCT BANKS, DIRECT BURIED, SURFACE OR RACKS:

VOLTAGE	DISTANCE
26.1. 4160V	3 FT
26.2. 480V	2 FT
26.3. 120V	1 FT
26. EXCAVATIONS FOR CONDUITS, HANDHOLES, MANHOLES AND PULLBOXES NEAR EXISTING PIPING, CONDUIT AND EQUIPMENT SHALL BE HAND EXCAVATED AND COORDINATED WITH PLANT ENGINEER.
28. MINIMUM DEPTH FROM TOP OF DUCT BANKS OR CONDUITS TO FINISHED GRADE SHALL BE 24" UNLESS OTHERWISE NOTED.
29. COLORED WARNING TAPE 6" WIDE SHALL BE INSTALLED 8" BELOW FINISHED GRADE DIRECTLY ABOVE ALL UNDERGROUND YARD CONDUITS ACCORDING TO THE FOLLOWING SCHEDULE:

29.1.	POWER: RED
29.2.	ALL OTHER CONDUITS: GREEN
30. CONTRACTOR SHALL RESTORE SIDEWALKS, ROADWAYS, SOD AND SPRINKLER SYSTEM PIPING TO MATCH EXISTING, AFTER THE COMPLETION OF THE CONDUIT AND PULLBOX INSTALLATION.
31. GROUNDING SHALL BE INSTALLED IN ACCORDANCE WITH NEC, ARTICLE 250. THE GROUNDING SYSTEM TEST SHALL NOT EXCEED A 48 HOUR SPAN DRY RESISTANCE OF 10 OHMS. ADDITIONAL GROUNDING TO MEET THIS REQUIREMENT SHALL BE INSTALLED AT NO EXTRA COST. GROUNDING AND BONDING CONNECTIONS SHALL NOT BE PAINTED. ALL GROUNDING CONNECTIONS SHALL BE EXOTHERMIC UNLESS SPECIFICALLY INDICATED OTHERWISE.
32. AN EQUIPMENT GROUND WIRE SIZED PER NEC SHALL BE PULLED IN ALL ELECTRICAL CONDUITS, POWER AND CONTROL, WHETHER OR NOT INDICATED ON THE PLANS.
33. ALL ENCLOSURES, TERMINAL JUNCTION BOXES, WIREWAYS, PULL BOXES ETC. SHALL CONTAIN A GROUNDING BUS. CONNECT ALL RACEWAY BONDS TO THIS BUS VIA GROUNDING BUSHINGS AND PROVIDE BONDING JUMPER FROM THIS BUS TO THE ENCLOSURE.
34. THE POWER AND SIGNAL SIDES OF ALL EXTERIOR INSTALLED INSTRUMENTATION SHALL HAVE SURGE PROTECTION AND SHALL BE GROUNDING, VIA A #6 AWG SOLID COPPER CONDUCTOR, TO A SEPARATE GROUND ROD AT EACH INSTRUMENT.
35. INSTRUMENTATION GROUND SHALL BE A #6 AWG COPPER CONNECTED TO THE GROUND GRID OR CONNECTED TO A DRIVEN GROUND. #6 GROUND WIRE SHALL BE INSTALLED IN CONDUIT WHERE EXPOSED. GROUND RODS SHALL BE 5/8" OR 3/4" BY A MINIMUM OF 20' IN LENGTH, AS INDICATED ON THE DRAWINGS.
36. CONTRACTOR SHALL INSTALL A POWER DISCONNECT SWITCH AT EACH 120V POWERED INSTRUMENT.
37. CONTRACTOR SHALL CORE DRILL EXISTING CONCRETE WALLS, FLOORS, MANHOLES, HAND HOLES AND PULL BOXES FOR CONDUIT PENETRATIONS. SEAL PENETRATIONS WITH NON-SHRINK GROUT OR APPROPRIATE FIRE RATED DEVICES WHERE APPLICABLE.
38. ALL CONDUITS PENETRATING RATED FIRE WALLS OR RATED FIRE FLOORS SHALL BE INSTALLED WITH U.L. APPROVED DEVICES AND OR FIRE RATED SEALING COMPOUND TO MAINTAIN THE FIRE RATING OF THE WALL OR FLOOR PENETRATED.
39. PROVIDE CONDUIT DUCT SEAL AT ALL CONDUIT ENDS.
40. ALL SPARE, ABANDONED, OR EMPTY CONDUITS SHALL BE SEALED WITH A CAP AT BOTH ENDS AND A PULL STRING INSTALLED WITH IDENTIFICATION OF OTHER END LOCATION AT BOTH ENDS.
41. ALL RECEPTACLES SHALL BE INSTALLED 18" AFF UNLESS OTHERWISE NOTED. LIGHT SWITCHES SHALL BE MOUNTED 48" AFF UNLESS OTHERWISE NOTED.
42. ALL RECEPTACLES WITHIN 6' OF A SINK SHALL BE GFI.
43. FLEXIBLE CONDUITS SHALL BE USED TO TERMINATE ALL MOTORS AND OTHER VIBRATING EQUIPMENT AND SHALL BE BETWEEN 18" AND 36" IN LENGTH.
44. TYPEWRITTEN AND LAMINATED PANEL SCHEDULES SHALL BE INSTALLED IN EACH PANELBOARD, AND TYPEWRITTEN TERMINAL BLOCK SCHEDULES IN EACH CONTROL CABINET.
45. SURGE PROTECTION DEVICES (SPD AKA TVSS) SHALL BE INTEGRAL TO NEW EQUIPMENT SHOWN AND SUPPLIED AS ONE UNIT AND ONE UL ENTITY.
46. CONTRACTOR SHALL PROVIDE AS PART OF THE ELECTRICAL SUBMITTAL, A LAYOUT OF THE ELECTRICAL

ROOM SHOWING SIZES OF ALL EQUIPMENT INCLUDING LIGHTING, AND HVAC WITH THEIR SPATIAL RELATIONSHIPS.

47. BRANCH CIRCUITS EXCEEDING 100 FT IN LENGTH SHALL BE WIRED WITH MINIMUM #10 AWG COPPER WIRES. CONTRACTOR SHALL VERIFY REQUIRED WIRE SIZE WITH VOLTAGE DROP CALCULATIONS.
48. OUTDOOR LIGHTING FIXTURES SHALL BE COPPER FREE ALUMINUM.
49. CONTRACTOR SHALL BALANCE PANELBOARD LOADS AT THE END OF THE PROJECT.
50. ALL METALLIC CONDUITS BELOW GRADE TO A MINIMUM ELEVATION OF 12 INCHES ABOVE GRADE SHALL BE PVC COATED RIGID METAL CONDUIT (RMC).
51. ALL METALLIC CONDUITS 12 INCHES AND GREATER ABOVE GRADE SHALL BE RMC.
52. IF CONCRETE ENCASED DUCT BANKS INCLUDE POWER WITH ANY TYPE OF SIGNALS EXCEPT FIBER OPTIC CABLE, ALL CONDUITS SHALL BE METALLIC.
53. CONCRETE DUCT BANKS WITH POWER ONLY WIRING SHALL BE PVC UNLESS OTHERWISE NOTED ON THE DRAWINGS.
54. COPPER CONDUCTORS FOR POWER WIRING WITH A VOLTAGE GREATER THAN 240V TO GROUND SHALL BE XHHW-2. OTHER POWER WIRING SHALL BE EITHER XHHW OR THWN STRANDED COPPER WIRING.
55. ALL REFERENCES TO STAINLESS STEEL OR SS SHALL MEAN TYPE 316 STAINLESS STEEL UNLESS OTHERWISE NOTED.
56. ALL JUNCTIONS BOXES, LOCAL CONTROL PANELS, DISCONNECT SWITCHES AND INSTALLATION HARDWARE INSTALLED OUTDOORS SHALL BE 316 STEEL.
57. ALL ELECTRICAL EQUIPMENT IN DESIGNATED CORROSIVE AREAS SHALL BE NEMA 4X 316 STAINLESS STEEL OR NON-METALLIC.
58. CONTRACTOR SHALL PROVIDE RECORD DRAWINGS TO THE OWNER AND ENGINEER WITHIN 30 DAYS OF PUMP STATION ACCEPTANCE. THESE SHALL INCLUDE PER FBC EC C405.7.4.1:
  - 58.1. SINGLE LINE DIAGRAM OF THE PUMP STATION AND SITE ELECTRICAL SYSTEM
  - 58.2. PLAN VIEWS OF COMPLETE PUMP STATION
59. CONTRACTOR SHALL PROVIDE AN OPERATION AND MAINTENANCE MANUAL PER FBC EC C405.7.4.2 INCLUDING:
  - 59.1. SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTION FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
  - 59.2. OPERATION AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED
  - 59.3. NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY
60. CONTRACTOR SHALL PROVIDE SIGNAGE PER NEC 110.24 AND 702.7 AT THE SERVICE ENTRANCE EQUIPMENT VIA A STAINLESS STEEL PLACARD, AFFIXED TO THE SERVICE DISCONNECT.
61. CONTRACTOR SHALL PROVIDE SIGNAGE PER NFPA 110 FOR THE EMERGENCY SHUT-OFF BUTTON LOCATED ON THE NORTH EAST OUTSIDE CORNER OF THE ELECTRICAL BUILDING.
62. CONTRACTOR SHALL PROVIDE SIGNAGE PER NFPA 704 FOR THE FUEL SUPPLY.
63. ELECTRIC MOTORS SHALL HAVE MINIMUM NOMINAL EFFICIENCY AS SPECIFIED IN FBC EC 505.7.5, TABLE 505.7.5.

DESIGNED <u>JMB</u> DRAWN <u>JMB</u> CHECKED <u>JCB</u> PROJ. ENGR. <u>CLK</u>				JOHN C. BURKE No. 17301		P.E.	
1 APRIL 2017 APPENDUM NO. 1 JMB NO. DATE ISSUED FOR BY				HAZEN AND SANDERS 666 Ponce de Leon Boulevard, Suite 1150 Coral Gables, FL 33134 Certificate of Authorization Number: 2771		SCALE N.T.S.	
CONTRACT: - CLIENTS PROJECT: - ENGINEERS PROJECT: 46016-016 CAD REFERENCE: 46016-016 E04				CITY OF HIALEAH DEPARTMENT OF PUBLIC WORK		PUMP STATION IMPROVEMENT PROGRAM PHASE 2	
DATE: 1/6/2017 2:44 1 APRIL 2017 APPENDUM NO. 1 JMB NO. DATE ISSUED FOR BY				HAZEN AND SANDERS 666 Ponce de Leon Boulevard, Suite 1150 Coral Gables, FL 33134 Certificate of Authorization Number: 2771		DATE: DECEMBER 2016 SHEET: 39 of 29 DRAWING: E04	